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ABSTRACT

The theme of this monograph is sustainability, which is defined as development that meets the needs of present generations without compromising the ability of future generations to meet their own needs. Sustainability, which is rooted in environmentalism, has been broadened to embrace an array of economic development policies, projects, and behaviors. Following a definition of sustainability in the context of higher education, the discussion focuses on: (1) how and why institutions become involved in sustainability issues; (2) sources of resistance to sustainability movements, including fear of high costs, failure of proponents to present a unified vision, and rivalries among national political groups; (3) the role of trustees in exploring issues of sustainability, including reallocating resources, exploring socially conscious investing, protecting institutional impartiality and academic freedom, encouraging thoughtful dialog, and promoting outreach. Sidebars throughout the document offer case studies of sustainability programs; a list of questions for trustees and governing boards; an essay on the "greening" of the sustainability movement; a "gazetteer" of 10 campus sustainability efforts; the text of the "Talloires Declaration," a document committing to sustainable practices signed by officers of 270 higher education institutes; and a postscript titled "Sustainability on Campus" by Daniel J. Levin. (Contains 11 references and 4 web sites.) (RAB)

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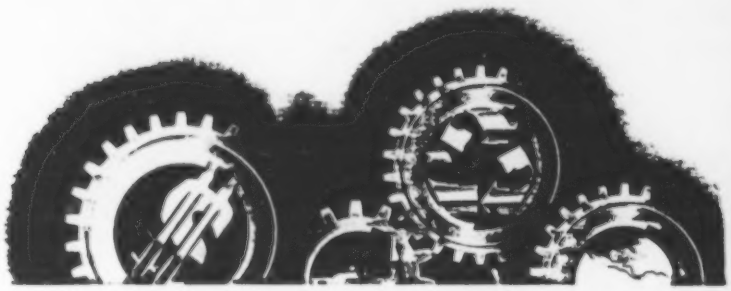

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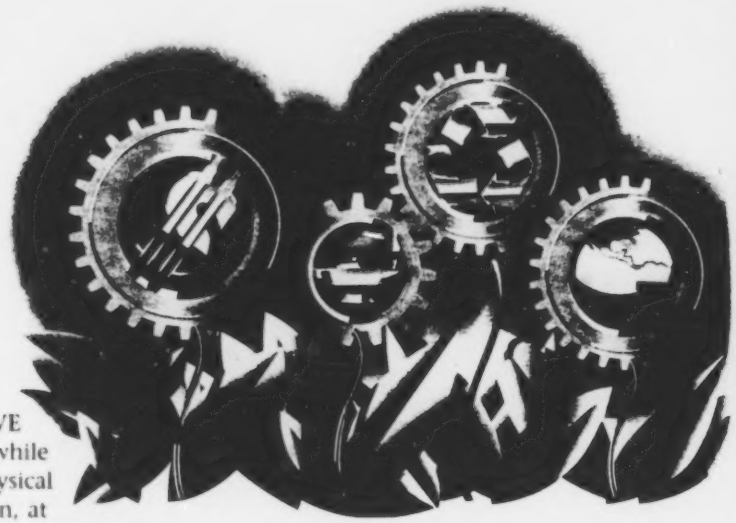

AN INSTITUTION CAN THRIVE academically and financially while hastening the demise of its physical community. That is the conviction, at least, of the rising numbers of college and university leaders who are embracing environmental sustainability.

Part conservation, part civic responsibility, part technological advancement, and part concern for human health, the theme of sustainability has mushroomed on campuses across the country and around the world in the past decade. The movement has broadened from its roots in environmentalism to embrace an array of economic-development policies, projects, and behaviors that affect all levels of higher education.

More than an environmental movement, "sustainability" embraces an array of economic policies, projects, and behaviors affecting higher education.

On campuses across America, sustainability program themes run the gamut from energy efficiency to environmental studies to the design of waste-free manufacturing to "green" architecture to stimulation of local economies. (For details, see the sidebar on page 8.)

Such initiatives, even if they start as modest efforts by committed students and faculty, often expand into campuswide, cross-departmental programs that provoke policy-level discussions of curriculum, purchasing, hiring—even an institution's mission. Consequently, the sustainability movement merits attention from presidents, governing boards, and senior administrators.

"Trustees play a critical role in sustainability because they have a direct responsibility and stake in the success of a college," says Anthony Cortese, a former dean of Tufts University who is president of a Boston-based sustainability advocacy group called Second Nature. "Trustees also provide important connections to the community."

Charles S. Clark is a senior editor at AGB.

Spiritually motivated ecology activists and hard-headed business leaders wary of alarmism interpret sustainability issues differently.

Sustainability enthusiasts share a belief that higher education institutions must play a special role in society's efforts to be wise stewards of our dwindling natural resources. Universities influence the thinking of future leaders and alumni, they reason, and they have freedom to act boldly and creatively.

The proper route to wise stewardship, however, is a matter of passionate controversy. The urgency of the problem is interpreted differently by players ranging from spiritually motivated ecology activists to hard-headed business leaders wary of alarmism. Skeptics fear that conservation efforts that appear to restrict economic growth will harm institutions that depend on financially healthy customers, private donations, and public appropriations. "Sustainability will require a significant shift in the way people and companies work and live," acknowledges Rick Clugston, president of the Association of University Leaders for a Sustainable Future in Washington, D.C. "Not everyone agrees on how this should take place, so the university's function is to create the debate."

Governing boards increasingly will be drawn into discussions on sustainability matters ranging from compliance with federal environmental regulations to appropriate uses of endowments to town-gown issues concerning campus construction of new sports facilities and student housing.

Defining Sustainability.

Development that meets the needs of present generations without compromising the ability of future generations to meet their own needs. That is how sustainability is described in the document that launched the movement, a 1987 report called "Our Common Future" from the United Nations World Commission on Environment and Development. Debates on sustainability have since permeated federal, state, and local governments, the business world, and now, higher education.

Some define sustainability with a rhetorical flourish, as in the "three E's" slogan: "Environmental stewardship, economic opportunity for all people, and equality for social justice."

But concretely, the principles of "the sustainable university" can be summarized as follows:

- Ensuring that the campus operates in an environmentally friendly manner.
- Providing research, technical assistance, and forums for public debates in local communities, states, and—if appropriate to the institution's mission—at the national and international levels.
- Revising academic programs so that they prepare students to be ecologically literate citizens, provide faculty with appropriate rewards to develop curricula, and create partnerships with K-12 education to enhance environmental education.
- Helping to revitalize local communities, businesses, and industries.

To be sure, the central focus of sustainability is environmental, and many sustainability advocates exhibit the personal-is-political activism that marked the civil-rights and women's movements. But few want to confine sustainability to a clique of environmentalists who, detractors say, would sacrifice free-market principles to an ideological agenda. Indeed, making sustainability a synonym for environmentalism needlessly raises a red flag, says Douglas Orr, president of Warren Wilson College in Asheville, N.C. "'Smart growth' is a less threatening term. We've got to do something about this throwaway society and bust out of its planned obsolescence," he says. "College campuses ought to be prototypes because they are self-sustaining communities that should be

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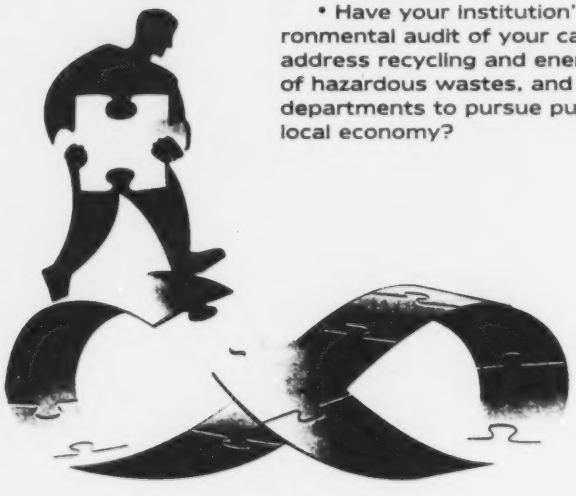
Illustrations by John Mattos

Questions for Trustees and Boards

- Does your board see value in addressing the principles of a "sustainable university"? Are they compatible with your institution's mission?
- What policy changes would be needed for your campus to pursue a sustainability program?
- What objections might your institution's stakeholders raise if your president and board were to pursue sustainability?
- Has the institution incorporated sustainability themes into academic programs beyond environmental studies?
- Does your campus master plan address issues of open space, pedestrian-friendly designs, and "green" architecture?
- Have your institution's leaders commissioned an environmental audit of your campus? If so, does the audit address recycling and energy efficiencies, proper disposal of hazardous wastes, and efforts by food-service and other departments to pursue purchasing strategies to help the local economy?



reflective and creative at finding a balanced approach."

Faith Gabelnick, president of Pacific University in Forest Grove, Ore., sees sustainability less as a political argument than as a practical one. "We treat it as a new technology, as a better way to build buildings," she says.

Such a broad, pragmatic approach is intended to attract adherents beyond just the experts and a few students dabbling in dormitory skull sessions. "Human impact on the environment is far more dependent on the actions of individuals who are not trained as environmental specialists than those who are," says a newsletter from Second Nature. "Therefore, environmental education must be a pillar of all higher education, rather than restricted to an isolated individual discipline."

Who Lights the Spark?

An institution's initial interest in sustainability can be piqued by a trustee, the president, an administrator, a dean, a professor, a staff member, or a student. But most often, veterans say, it is faculty members who assemble the first proposal for an integrated, comprehensive sustainability plan that covers teaching, research, operations, service, and outreach.

Students more often drive an individual issue, such as recycling, and they often provide

Case Study

Middlebury College's "Peak of Excellence"

Tucked in the picturesque countryside, Middlebury College is home to a sustainability effort with an influence far beyond the borders of Vermont. It is old: As far back as 1965, the institution created the first environmental studies program at an American liberal arts college. And it is deep: Its commitment to sustainability in everything from scholarly research to building design is enshrined in a mission statement enthusiastically endorsed by Middlebury's board of trustees.

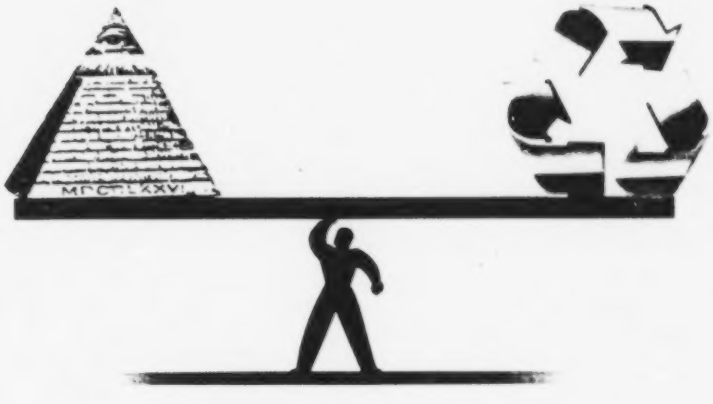
"As a leading liberal arts college, our strengths are in teaching and research, with 41 affiliated faculty from 19 departments linked to the interdisciplinary environmental studies program," says Nan Jenks-Jay, Middlebury's director of environmental affairs. "But Middlebury takes it beyond the classroom to the whole campus and the surrounding region."

Though primarily rural Vermont has a long-standing tradition of restrained development and reverence for nature, the movement at Middlebury got rolling during the 1970s when, in response to the fuel shortage prompted by the Arab oil embargo, the college established an energy committee. Its environmental studies program, meanwhile, progressed to a level that permitted Middlebury's dean of faculty in 1988 to arrange for it to be reviewed by outside experts. The result was enhanced credibility and the creation of a new political science faculty post concentrating on environmental studies, the first of many new appointments with contractual commitments to environmental studies.

In 1992, Middlebury signed the international Talloires Declaration on campus sustainability. And in 1994, the college took the major step of making environmental citizenship one of Middlebury's all-important "peaks of excellence." As President John McCardell explains, "'Environmental Studies and Awareness' is one of our six peaks because of the college's long tradition at the forefront of environmental education in both the classroom and on campus."

In 1995, the campus issued a report detailing the college's initiatives in energy conservation, sustainable design, and land management. The subject's elevated status was demonstrated in Middlebury's decision to make its campus environmental council (a successor to the energy committee) a standing committee that reports directly to the president. Spurred by Middlebury's executive vice president and treasurer, this council issued a set of recommendations for environmental sustainability that the president and board promptly incorporated into the mission statement.

"Middlebury College as a liberal arts institution is committed



the energy for such tasks as researching an institution's compliance with environmental practices. They join organizations such as consumer advocate Ralph Nader's Public Interest Research Group or the Student Environmental Action Coalition. "Students are idealistic and their expectations are high," says Clugston. "They want the institution to do good quickly."

But the continuity needed to maintain a sustainability program is more often provided by administrators (including auxiliary service and facilities operations staff), says a paper from the National Wildlife Federation. "When administrators are invested in environmental change, new programs tend to become more institutionalized—that is, they endure and improve (even after the students who advocated them graduate), are more efficiently designed and well-documented, and extend more broadly throughout the campus community."

Outside advocates also can influence an institution by playing the role of a hectoring

to environmental mindfulness and stewardship in all its activities," a passage in the mission now reads. "This commitment arises from a sense of concerned citizenship and a moral duty and from a desire to teach and lead by example."

Trustees also approved an unusual declaration stating that "we believe our chosen course the more exciting for its audacity." The strategy in Middlebury's sustainability plan, it continued, "assumes that managed growth, with appropriate infrastructural accommodations made beforehand, will not simply convey a sense of momentum, excitement, and improvement, but will result in a stronger and more excellent institution."

The result: The college recycles 68 percent of its waste, conducts regular campus audits, composts 75 percent of its food residual, conserves energy, incorporates sustainable design into all construction and renovation, and provides grants for innovation in campus sustainability.

High-level support for the effort was crucial on both philosophical and practical levels. "By stipulating that it values this area, the trustees allowed us to move ahead on both the enabling and the financial fronts," says Jenks-Jay, whose job permits her to meet regularly with the campus provost and other senior administrators while playing a role in environmental academic matters. "Our efforts are mainstream and systemic rather than fragmented," she says.

Middlebury's most recent sustainability accomplishment is the design and construction of the $40 million Bicentennial Hall, the new science center that opened in September 1999. Dovetailing with a master campus plan that requires preserving the viewsheds of Vermont's spectacular landscapes and outdoor lighting that does not interfere with the night sky, the facility was built using 125,000 square feet of Vermont-grown, green-certified lumber. The project was groundbreaking in that it was done exclusively with Vermont-based suppliers, virtually "jump-starting an industry," says Jenks-Jay, "and making us see ourselves through a new lens as a facilitator of environmental, economic, and regional sustainability."

The green wood, she estimates, added a 5 percent premium to the building's price tag, but the trustees were solidly in favor, especially since other technological features will save money. A faculty and student group is analyzing the project's regional economic value. "People say to me, 'You can do all that because you're in Vermont,'" Jenks-Jay says. "My response is that they can be replicated anywhere if the desire and institutional support exist."

Cassandra. For example, in spring 1999, the Washington-based advocacy group Ozone Action persuaded student governments at Harvard and Stanford universities and the University of Washington to pass resolutions appealing to boards to use their endowments as levers. The resolutions called on investment committees to open a dialog with companies that resist the air-pollution regulations specified in the 1997 international Kyoto Protocol on greenhouse gases.

Another way institutions become involved in the sustainability debate is when someone on campus reports a violation of a pollution or toxic-waste law to the federal Environmental Protection Agency. Universities are ripe for environmental programs because "they're like small towns with analogs of factories, car repair shops, and huge underground storage tanks—but there's no government," an EPA enforcement officer recently told the *Wall Street Journal*. "Every facility on campus seems to have its own environmental manager. Most of them differ with each other over how to comply with regulations."

Making sustainability a synonym for environmentalism needlessly raises a red flag. "Smart growth" is a less threatening term.

But just as often the spark is lit when the governing board is inspired by a meaty presentation from an expert in one of the many sustainability-related disciplines. At Pacific University in Oregon (a state, Gabelnick notes, in which executives in industries from lumber to electrical power are conversant in environmentalism), trustees were particularly impressed by a talk by a "green" architect. He helped Pacific's

campus property committee choose an innovative yet affordable building design by distributing rug and tile samples to show that design products made from recyclable materials can be high in quality.

Institutions sometimes must consider a trade-off between economizing and setting a good environmental example.

Sources of Resistance.

Some in the sustainability movement express frustration with higher education's pace in embracing the cause. As David Orr, chairman of the environmental studies program at Oberlin College, told a 1998 academic symposium: "If administrators (and trustees) are aware of the reality of global change, that awareness is seldom allowed to influence institutional priorities. Institutions of higher education are, accordingly, governed on the assumption that business will continue more or less as usual for as long as the mind can imagine. Blindness, sometimes outright ignorance, is reinforced by the financial and ideological dependence of colleges and universities that tends to make them reluctant, unimaginative, and mostly toothless critics of everything from free trade and the electronic global economy to the efforts underway to re-engineer the fabric of life."

The obstacles to adopting sustainability programs on campuses are many:

Fear of high costs. "The first question from trustees is always, 'Will it cost more?'" notes Pacific's Gabelnick. "And the answer is often: It depends."

Many in the movement admit that green energy, for example, can cost a campus more than traditional electrical power, forcing institutions to consider a trade-off between economizing and setting an example in the effort against air pollution. But there are plenty of green products—recyclable carpeting, for example—that actually can save money. One national study cited 23 examples of campus sustainability efforts that together save a total of $17 million a year. Sustainability programs at the State University of New York at Buffalo are estimated to have saved $60 million over the past 15 years.

Advocates point out that high up-front costs can be amortized over years, and in that way some projects pay for themselves. Energy-efficient heating and cooling units, for instance, cut utility bills over the long haul, and nontoxic or nonodorous wallpaint can avoid future health-care expenses. Recyling, cogeneration, and long-term lightbulbs offer quick paybacks, but sustainability efforts in food services are more difficult to justify immediately, specialists note.

Inertia. Another source of resistance to sustainability efforts stems from the abstractness of many of the related issues and the fragmentation of campus subcultures. Many people perceive problems in the social, economic, environmental, political, health, demographic, and international realms as separate issues, says Cortese. "And a lot of the effects of patterns of consumption and production are invisible to average people on the street. They can't know that each consumer consumes 120 pounds of resources per day in fossil fuels, forest products, grassland, and minerals. Most of it goes to waste before we see the product or service.

"What we are trying to do," he continues, "is make those effects visible and teach students how to reduce the impact while maintaining their quality of life and economic growth. We want to approach it in a systemic way, so that all understand that there are parts to the system."

The academic world is famously specialized, particularly in research, which "makes it hard for a coherent vision to take hold," adds Clugston. "The tendency is to want one sector, like environmental management, or environmental policy, to drive the whole effort. But once one sector initiates it, the others resist, as if it were some conspiracy to force someone who works in modern European history to learn about science. There is fear that someone is imposing one agenda on the campus as a whole. The politics of building a coalition is tricky."

Other sources of resistance come from off campus.

National political rivalries. When sustainability is oversimplified to mean purely environmentalism, it can be mischaracterized as an issue supported chiefly by Democrats. Indeed, the Kyoto accord aimed at reducing auto emissions thought to contribute to global warming has the support of the Clinton White House but not the Republican-controlled Congress.

Yet sustainability advocates point out that a belief that the earth's resources are limited and require new protective actions has long ago crossed party lines. Americans of all leanings have noticed the altered weather patterns and more frequent natural disasters of recent years. Hunters, farmers, ranchers, and suburbanites have begun to question land-use policies that produce traffic congestion and sprawl. For example, when President Clinton announced new air-pollution rules in December 1999 that will impose unprecedented demands on gasoline and car manufacturers, the auto industry appeared agreeable, as did Clinton's political opponents.

"If I design a textile factory in which the water coming out is cleaner than the water that went in, that's a design solution," says William McDonough, the world-renowned "green dean" from the University of Virginia School of Architecture. "That fits in with the Republicans' antiregulation agenda."

The Greening of the Sustainability Movement

Though many in the sustainability movement cut their teeth on the environmentalism of the 1960s and 1970s, the modern movement got rolling in the late 1980s and early 1990s. In 1989, the National Wildlife Federation began documenting campus ecology projects. The following year, a group of 23 university presidents from 13 countries met in the French town of Talloires (where the instigator, Tufts University, maintains a facility) to sign a declaration committing to major campus sustainability efforts. Officers from 270 institutions of higher education in 40 countries, including 81 institutions in the United States and Canada, have since signed the Talloires Declaration (see page 13 for the text of the document).

In 1994, a "Campus Earth Summit" at Yale University attracted 465 students, faculty, and staff from 50 states and 22 countries. Sponsored by the Heinz Family Foundation, it produced a Blueprint for a Green Campus that added detail to the shared principles. The growing array of groups began attracting foundation money from such sources as the Nathan Cummings Foundation, the Pew Charitable Trusts, and the V. Kann Rasmussen Foundation.

An alphabet soup of campus-oriented sustainability organizations sprung up, among them the Center for Respect of Life and Environment, the Consortium for Environmental Education in Medicine, the World Resources Institute's Management Institute for Environment and Business, the National Wildlife Federation's Campus Ecology Program, Second Nature, and the Association of University Leaders for a Sustainable Future.

In the United States, the groups have formalized an umbrella organization called the Higher Education Network for Sustainability and the Environment (HENSE), which was launched this January at a gathering at Clark Atlanta University. Internationally, the main academic players assembled in Valencia, Spain, in November 1999 for the Third International Congress of Universities for Sustainable Development and the Environment.

A further sign of the movement's growth is the fact that conservation committees now can be found at many associations involved in campus commerce: the National Association of College Bookstores, the National Association of College and University Business Officers, and the National Association of College and University Food Services.

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A Gazetteer of Campus Sustainability Efforts

Visions of "the sustainable university" found on American campuses vary as widely as the range of institutions themselves. What the visions share, for the most part, are efforts to (1) serve as a model campus for students and community, (2) create curricula that emphasize ecological literacy in courses beyond environmental sciences, and (3) generate opportunities for research and service toward sustainability-related ends. Here are some examples:

At the *University of Maryland*, the Center for Environmental Science is at the hub of regional efforts to curb contamination of the Chesapeake Bay watershed, helping state and local governments pursue strategies such as new water-pollution treatment methods and land-use planning aimed at minimizing automobile-dependent suburban sprawl.

At *Michigan Technological University*, the importance of the auto industry to the state's economy has prompted faculty to focus on environmentally conscious manufacturing, such as designs that build in antipollution measures at the front end of the pipeline. Named one of the Environmental Protection Agency's National Centers of Excellence, Michigan Tech also has entered into numerous institutional and corporate partnerships to pursue research into clean industrial-treatment technologies and environmental management of lake-water currents.

Oberlin College recently dedicated its one-of-a-kind "dream house for environmental studies," an award-winning $7.2 million building that converts sunlight to electricity and purifies and recycles water. The building also features heat-retaining windows with offices, classrooms, an atrium, and a 100-seat auditorium. Called the Adam Joseph Lewis Center, it will use about a fifth of the energy consumed by comparable structures, and it will be used for air-quality tests by the National Institute of Standards and Technology. The surrounding landscape will feature an orchard, greenhouse, garden, a wetland, and a "solar plaza" marking the sun's equinoxes, making it not just a building but also a teaching tool.

Clemson University has teamed with the *University of South Carolina* and the *Medical College of South Carolina* to collaborate in seeking alternatives to traditional environmental, economic, and social activities in higher education. The schools have incorporated principles of sustainability into their curricula and are seeking to reduce the environmental "footprint" associated with university operations. In addition, Clemson's Strom Thurmond Institute of Government and Public Affairs has a grant from the Pew Charitable Trusts to pursue interdisciplinary approaches to problem-based learning in sustainability.

In another regional collaboration, seven colleges and universities in New Jersey have joined to form the New Jersey Higher Education Partnership for Sustainability. Across the river, *Lehman College of the City University of New York* has set up environmental partnerships with community groups in the Bronx to protect open space and revitalize dilapidated areas. The college also has created an interdisciplinary studies program in environmental policies that stretches across 13 academic disciplines, among them the physical sciences, sociology, philosophy, and literature.

The *State University of New York at Buffalo* has implemented a wide-ranging sustainable facilities-management program that includes recycling up to half of the university's solid-waste stream, retrofitting buildings for heat recovery and lighting-system upgrades (in partnerships with regional private power companies), and restricted distribution of Third Class ("junk") mail.

Tufts University has an EPA grant to find ways to reduce the campus's role in harming the local community's air, health, and safety by reviewing practices surrounding food waste, transportation, energy efficiency, procurement, disposal of hazardous materials, composting, and recycling.

The *University of Virginia's* Institute for Environmental Negotiation, which mediates conflicts concerning environmental, economic, and ethical interests, has been hired by the Virginia Department of Health to examine ways to manage biosolids (untreated sewage sludge) in ways that protect local citizens and do not threaten the region's economy.

At the *University of Texas at Houston*, proceeds from the recycling program are used to fund academic scholarships.

Pacific University runs a campus beautification program in which faculty and students plant and tend gardens, which is seen as a way of curbing campus vandalism. Pacific also has brought in an environmental psychologist to help students manage their use of dormitory space.

Other projects are described in the annual Campus Environmental Yearbook published by the National Wildlife Federation (www.nwf.org).

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The political debate on sustainability is apt to continue, with battles unfolding less often over goals than over tactics.

The political debate on sustainability is apt to continue, with battles unfolding less often over goals than over tactics—mandatory regulations versus voluntary compliance, a strong federal role versus a strong local prerogative.

Concerns about corporate profitability. Resistance to the Kyoto accord, if not to sustainability in general, continues in parts of the business community in the form of the Global Climate Coalition. This Washington, D.C.-based alliance of 50 companies (plus some trade associations in manufacturing and agriculture) opposes the Kyoto Protocol's call for government-mandated air-pollution-reduction steps, which would have a greater impact on private companies in the developed world than in the developing world.

The coalition supports the voluntary antipollution steps contained in various legislative proposals offered as alternatives to ratifying the Kyoto treaty, says its executive director, Glenn Kelly. The attacks on the coalition by campus-oriented environmental activists such as Ozone Action, he says, are an "effort to demonize us. In the game of politics, it helps to have an enemy."

Sustainability leaders caution against what they call industry "greenwash"—public-relations efforts that mask an unwillingness to change. "The Global Climate Coalition plays both sides of the fence," says Clugston. "They're resisting demands that companies change, but they're exploring future options, looking for a market niche, as corporations are supposed to do."

But many businesses are taking the lead. The Ford Motor Co. (and doubtless its competitors) is at work on prototype cars with tailpipes that emit no pollutants, notes Michigan Technological University President Curtis J. Tompkins. A coalition of 125 companies has formed the World Business Council for Sustainable Development. Some 50 corporations have endorsed the principles of the Coalition for Environmentally Responsible Economies (CERES), which comprises 54 investor, environmental, religious, labor, and social-justice groups. Finally, many business-school graduate programs have begun working with the World Resources Institute to integrate sustainability themes in curricula and research.

Without leadership from business, says Clugston, "the universities can't do it all. You can't have a university get too far out of line with the overall economy."

What Trustees Can Do.

In addressing sustainability, governing boards—as is often the case—are called on to bridge gaps between camps. "Trustees may be commerce people by day, but at night they become an institution's guardians," says McDonough. Commerce is "quick, effective, and creative," he says, while guardianship is "slow, serious, deliberative, and intended to preserve the status quo."

The problem with the guardian approach is that it emphasizes "maintenance rather than fecundity," McDonough continues. "Yet commerce is where everything happens, and trustees need to make a fundamental shift toward it." For example, trustees might decide they want to switch campus food-purchasing practices to use organic local produce. "This has a multiplier effect in that it helps local farmers, cuts transport costs, connects students, and makes quality issues understandable," he says. "The trustees' job is to say that they wish for such a change to happen. It then becomes the role of commerce to come up with a profitable solution."

This vision is echoed by Don Boesch, president of the University of Maryland's Center for Environmental Science, a cross-disciplinary program that focuses on preserving watersheds,

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Case Study

Georgia Tech's Green Engineers

The whole world got a look at the Georgia Institute of Technology's sustainability efforts during the 1996 Olympic Games. Besides giving its downtown Atlanta campus over to athletes as the Olympic Village, Georgia Tech showcased its new Aquatic Center that is powered by one the world's largest rooftop photovoltaic arrays.

Though Tech is known for educating engineers (it boasts the highest annual number of graduates in the country), its sustainability program is a university-wide effort that focuses on quality-of-life issues as well as technical research into everything from green manufacturing to cleaner transportation.

"This is ironic given that Tech students are not the typical granola and Birkenstocks crowd," says Carol Carmichael, director of Tech's Institute for Sustainable Technology and Development. "Many of our students go on to run companies, so they see sustainability as it relates to the economy and resource use. They know that companies have to do things that are profitable and that make them competitive for the future."

Georgia Tech's program also is a textbook example of what strong leaders accomplish—what Carmichael calls a "harmonic convergence" of leadership. Its Institute for Sustainable Technology was launched in 1992 by Jean-Lou Chameau, the futuristic dean of engineering at Tech, with a major grant from the General Electric Fund. There was the arrival in 1994 of Tech's current president, G. Wayne Clough, an alumnus who brought connections to the Georgia political community and a highly credible commitment to sustainability. And there was a push from Tech Board of Advisors Chairman Ray Anderson, who is CEO of Interface Corp., which manufacturers recyclable carpets, and who cochaired the U.S. President's Council on Sustainable Development.

In 1997, Tech adopted a 15-year master plan with sustainability as a recurring theme. It commits to the creation of new campus green space, even with an ambitious schedule that calls for the addition or expansion of buildings every year for the next 15. The secret: building on infill lots and eliminating large numbers of parking spaces. And though the president set the tone by giving up his own parking space to help form a pedestrian-only quad, some students have squawked. "Lots of students want to save the whales and the rainforest but don't want to give up their cars," says Carmichael. "But sustainability starts right here."

Such centralized edicts are the exceptions, however. The eight-member staff of the Institute for Sustainable Technology prefers operating behind the scenes to allow sustainability efforts to blossom naturally

estuaries, and coastal areas through wildlife management and sustainable land-use planning. "Trustees are effective when they speak powerfully and repeatedly about an issue so that folks take notice and begin to address it," he says.

Concretely, trustees can address sustainability in the following ways:

In addressing sustainability, governing boards—as is often the case—are called on to bridge gaps between camps.

Opening discussions with colleagues. On many campuses, a single trustee plants the sustainability seed. For example, one of the key trustees at North Carolina's Warren Wilson College is Mimi Cecil, a member of the famous Vanderbilt family that built the Biltmore estate in Asheville. Cecil chairs the North Carolina Environmental Defense Fund and, as a denizen of the region's arts-and-crafts movement, helps Wilson College's work-study programs by bringing students to the Biltmore.

Similarly, at Michigan Tech, one of the influential board members is Ruth Reck, a longtime General Motors researcher who now directs the Energy Department's prestigious, congressionally established National Institute for Global Environmental Change, headquar-

among students, faculty, and staff. Yet that doesn't prevent Tech's leaders from seeking a basic consistency in policy in such areas as budget allocations and compulsory courses in Tech's diverse degree programs.

The most exciting research—the brainpower behind Tech's worldwide reputation—is performed by more than 200 faculty members in 18 specialized centers. With investments from the industry-government-university partnership called the Georgia Research Alliance, Tech began incorporating sustainability into several of its existing and planned research programs.

Many of its laboratories are located in campus "research neighborhoods," in which scholars from dovetailing disciplines work in close proximity to avoid the fragmentation that often isolates researchers. What makes the program grow, Carmichael says, is Tech's strategy of targeting early support to faculty members who already are successes in their fields. Some examples of Tech's sustainability research:

- The Environmentally Conscious Design and Manufacturing program is using data from an actual textile-manufacturing facility to develop a computer simulation model to help corporate managers gauge production and workplace environmental cost factors so that they can make decisions on the trade-offs.
- The Georgia Water Resource Institute is analyzing satellite data on world climate conditions to create integrated computer models that can help state and foreign governments manage river basins and meet the overlapping needs of water supply, irrigation, flood control, and electrical power.
- The Georgia Transportation Institute is helping the federal Environmental Protection Agency revise its methods of measuring polluting auto emissions. It also is inventing new electronic methods for tracking the behavior of drivers in traffic.
- Finally, the University Center of Excellence for Photovoltaics is doing a pioneering search for raw materials that can capture and store energy from sunlight both effectively and inexpensively. The center's director says its researchers are "within striking range" of designing a process that makes solar energy affordable to average consumers.

Such attempts to square the ideals of conservation with the realities of the marketplace are typical of Georgia Tech's overall approach to sustainability. "Our mission is education and innovation, not saving the earth," Carmichael says. "But sustainability is about trade-offs. Like Ray Anderson says, we don't have to be perfect. But we want a commitment to move in the right direction."

Fund-raising efforts can encourage donations that are earmarked for sustainability projects.

tered at the University of California at Davis. "It is best to present sustainability issues to the board as a whole," she advises. Otherwise, there's a risk that one trustee will be typecast as the environmentalist, and another may disagree regularly as a matter of principle. "The last thing you want is a divided board," she says.

Updating the master plan. Long a central concern of trustees, the blueprint for the institution's physical layout in recent years has come to address everything from parking to hazardous waste removal to energy efficiency. As Pacific's Gabelnick puts it, a modern master plan must function like a photographic plate with both positive and negative components. "It must plan for open and green spaces as well as for buildings," she says.

Commissioning sustainability audits. Second Nature, the National Wildlife Federation, and University Leaders for a Sustainable Future all have consulting teams available to campuses to provide advice on how to take an inventory of current sustainability practices. Going beyond mere regulatory compliance, these audits explore a campus's natural features; sources of energy, food, and water; waste-disposal practices; local economic factors; and the extent to which sustainability is a visible theme in curricula, campus life, and campus documents. No one scores well, says Clugston, but the purpose is to identify the goals and sharpen the focus.

Often, students conduct the audits, in some cases earning academic credit in the process. At Penn State University, for example, students and faculty visited the Somerset County landfill that receives the school's trash, journeyed to the open-pit mines near Dubois that provide its coal, and walked through the local well fields that supply its water. They issued a report that considered 34 indicators—ranging from water consumption to recycling to pesticide use—and found varying results.

Reallocating resources. As part of their fiduciary responsibilities, trustees can influence the estimated $190 billion that higher education institutions collectively spend annually in operations and purchasing. As Cortese argues, favoring environmentally friendly contractors helps create local demand for green products and services. In the same way, fund-raising efforts can encourage donations that are earmarked for sustainability projects.

Exploring socially conscious investing. Perhaps most controversial is the proposal that campus finance and investment committees steer at least a portion of the institution's funds away from the stocks of companies that some perceive as "anti-green." In 1994, for example, the Tufts University trustees divested the university of $2 million in Hydro-Quebec bonds.

Green investing is often intertwined with broader, morally driven investment strategies that seek to avoid taking profits from tobacco companies, for example, or (back in the 1980s) from companies that did business with the apartheid racial system in South Africa. The research and strategies for sustainability-based investing are provided by such groups as the Coalition for Environmentally Responsible Economies (based in Boston), Co-op America (Washington, D.C.), Business for Social Responsibility (San Francisco), Franklin Research and Development (Boston), the Calvert Group (Bethesda, Md.), Domini Social Investments (King of Prussia, Pa.) and the Jesse Smith Noyes Foundation (New York City). About 10 percent of today's investment funds go through some sort of social filter, says Cortese, and many stocks that are listed in the Dow Jones Sustainability Group Indexes have outperformed other comparable stocks, mostly through innovative company management.

"Socially conscious investing creates a dilemma" that forces a choice between two value systems, says Clugston of University Leaders for a Sustainable Future. "There is an ethic that says we must be fiscally responsible at a time when students are demanding cheaper tuition and faculty want higher salaries. At the same time, there is a moral need for an institution to have its own themes and high standards rather than just taking advantage of every legal

Text of the Talloires Declaration

We, the presidents, rectors, and vice chancellors of universities from all regions of the world, are deeply concerned about the unprecedented scale and speed of environmental pollution and degradation, and the depletion of natural resources. Local, regional, and global air and water pollution, accumulation and distribution of toxic wastes, destruction and depletion of forests and soil, depletion of forests and soil, depletion of the ozone layer, and emission of greenhouse gases threaten the survival of humans and thousands of other living species, the integrity of the earth and its biodiversity, the security of nations and the heritage of future generations. These environmental changes are caused by inequitable and unsustainable production and consumption patterns that aggravate poverty in many regions of the world.

We believe that urgent actions are needed now to address these fundamental problems and reverse the trends. Stabilization of human population, adoption of industrial and agricultural technologies that minimize resource depletion, pollution and waste, and ecological restoration are crucial elements in creating an equitable and sustainable future for all humankind in harmony with nature. Universities have a major role to play in education, research, policy formation, and information exchange to make these goals possible.

University heads must provide the leadership and support to mobilize internal and external resources so that their institutions respond to this urgent challenge. We, therefore, agree to take the following actions:

1. Use every opportunity to raise public, government, industry, foundation, and university awareness by publicly addressing the urgent need to move toward an environmentally sustainable future.

2. Encourage all universities to engage in education, research, policy formation, and information exchange on population, environment, and development to move toward a sustainable future.

3. Foster programs to produce expertise in environmental management, economic development, population and related fields to ensure that all university graduates are environmentally literate and responsible citizens.

4. Foster programs to develop the capability of university faculty to teach environmental literacy and responsibility to all undergraduate, graduate, and professional school students.

5. Set an example of environmental responsibility by establishing programs of resource conservation, recycling, and waste reduction at the universities.

6. Encourage the involvement of government at all levels, foundations, and industry in supporting university research, education, policy formation, and information exchange in environmentally sustainable development. Expand work with nongovernmental organizations to assist in finding solutions to environmental problems.

7. Convene deans of appropriate schools and environmental practitioners to develop research, policy, and information exchange programs and curricula for an environmentally sustainable future.

8. Establish partnerships with primary and secondary schools to help develop the capability of their faculty to teach about population, environment, and sustainable development issues.

9. Work with the United Nations Conference on Environment and Development, with the United Nations Environment Programme, and other national and international organizations to promote a worldwide university effort toward a sustainable future.

10. Establish a steering committee and secretariat to continue this momentum and inform and support each other's efforts in carrying out this declaration.

(Signed by officers of 270 higher education institutions from 40 countries.)

short-term opportunity."

Kelly of the Global Climate Coalition protests the movement's efforts to select certain companies as being greener than others. "All of our companies are responsible, and all are investing substantially in green pursuits, both in the environmental and efficiency sense," he says. "There's a mistaken sense that business is bad for the environment, when in fact it is business that has made the investment and taken action to produce a clean environment."

Trustees, counters McDonough, too often presume that all businesses are socially responsible. But on the other hand, a lot of "green proposals amount to an idiotic choice between being hanged and being shot," he says. "Trustees should be mindful of the issue, and the university is a good place to explore it."

Protecting institutional impartiality and academic freedom. Another responsibility of boards is their role as a buffer between conflicting views in the community, a discipline that many new trustees must learn in order to help institutions avoid political favoritism. Tompkins notes that the campus of Michigan Tech has played host to such famous liberal environmentalists as Ralph Nader and Robert F. Kennedy, Jr. Occasionally, one his trustees gets

a call from a disgruntled citizen requesting intervention in the campus speaker selection process, a suggestion that, were the trustee to follow through on it, would be viewed on campus as a violation of academic freedom and/or a board effort to micromanage the institution. Similarly, Tompkins adds, Michigan Tech faculty members often are called as expert witnesses in proceedings involving major state land-use decisions, a role that some members of the public misinterpret. Trustees should help combat the perception that when scholars testify, the institution itself is taking sides in a policy dispute.

Encouraging thoughtful dialog. Many outsiders count on trustees in the privacy of board meetings to serve as counterweights to the tendency of some students and faculty to rush into drastic actions the institution may later regret. Of the issue of global warming, for example, Kelly says, "We're grateful that trustees take a responsible approach to the climate debate in general. It's like when hot tea in a cup spills onto a saucer and gets cool. Most trustees do a sober analysis and learn the programs and positions we take so that by the time a decision reaches the board, the administration has done its research and can pause."

Promoting outreach. In their role as bridges between the university and external stakeholders, trustees—particularly those who serve on various boards—can discuss sustainability among business executives, politicians, and foundation leaders. Presidents who favor sustainability often note that backing from trustees enhances their own willingness to risk political criticism. Sometimes trustees can influence the extent to which government leaders and grantmakers fund research and education around sustainability issues. And they can help design recruiting strategies to attract students who can warm to the sorts of sustainability principles that will be valued by future employers.

An Under-Considered Issue.

Though the sustainability movement has many visible and vocal advocates, it has yet to catch on at the majority of universities and colleges. A 1999 survey by Robert W. Taylor, professor of urban and environmental studies at New Jersey's Montclair State University, found that only 10 percent of institutions displayed an interest in the natural environment in their mission statements (based on his checking of the Web sites of 400 randomly chosen campuses). Only 7 percent of the Web sites discussed environmental projects; 38 percent of the campuses offered environmental majors; and 20 percent engaged in environmental outreach.

"There is still a widely accepted political philosophy that the unfettered pursuit of growth is central to the American lifestyle and that this is what has created our economic success," says the University of Maryland's Boesch. "We're dealing with individual Americans who like having large homes and owning two or three cars. It's easy just to talk about it, but we must connect our philosophy to what we do in our lives to address both the quality of life and our nation's declining natural resource base."

The tendency of some sustainability advocates to lapse into shrill rhetoric is unlikely to win converts. "Guilt is not a motivator," warns architect McDonough. Society does need a need a new paradigm that works with nature rather than "using technology to transform the world to human effect. But we can celebrate our abundance, and universities can be the model for understanding how. We need do it only if it's profitable."

Activists take heart from the fact that trustees and other campus leaders increasingly come from the generations for whom environmentalism is a recognized field. "One of the big questions is to what extent the universities can lead," says Clugston. 'As a body that's responsible for the direction and vision of an institution, governing boards can take advantage of opportunities to pick the low-hanging fruit. But while others are simply reactive, they can also engage in strategic planning for what the world is likely to be like in ten or twenty years."

As Cortese puts it: "Trustees have direct responsibility for determining what kinds of people we want to turn out to create a thriving society in the 21st century." ✧

Additional Reading

In addition to the books listed below, readers are encouraged to visit these Web sites: Second Nature (www.Secondnature.org), the National Wildlife Federation (www.nwf.org), the Higher Education Network for Sustainability and the Environment (www.hense.org), and the Global Climate Coalition (www.globalclimate.org).

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This Issue

Sustainability on Campus

BY DANIEL J. LEVIN

In our efforts to help boards become more effective and advance the cause of citizen trusteeship, AGB avoids telling members what to think about complex public-policy issues. Rather, the association strives to inform trustees, chief executives, and senior administrators about developments that could affect the strategic direction of their institutions and encourages them to apply this knowledge to their campus's distinctive mission and culture.

Every two years, for example, AGB publishes a widely read document, "Ten Public Policy Issues in Higher Education." The most recent version listed "campus sustainability" among the emerging key policy issues for colleges and universities. Because the topic calls for a dispassionate examination of several controversial and sensitive issues, AGB turned to a veteran journalist, senior editor Charles S. Clark, to write this issue of *Priorities*.

Although intensively debated at all levels of government, sustainability issues have barely begun to penetrate campus boardrooms. Because these topics concern—but are not confined to—society's controversies over environmental protection, discussions of sustainability issues must be handled with sensitivity to an array of conflicting interests. Whether the topic is reducing pollution from auto emissions, recycling, purchasing food from local farmers, or integrating ecological themes into curricula, debates over practices designed to preserve the earth's resources inevitably generate resistance from parties who feel their ox is being gored.

On campuses, in particular, passions run deep among students with a bent toward idealism and among professors who bring to their work a moral sense of mission. "Academics with relevant expertise," wrote Yale University forestry lecturer Carl Safina in the *Chronicle of Higher Education*, "have a professional—and personal—obligation not to assume that some other responsible party will figure out how to preserve the resources on which we and future generations depend."

Trustees, chief executives, and senior administrators have an even greater duty. They should take the long view and ensure that their institution enjoins a healthy examination of sustainability issues. They should serve as bridges to the communities surrounding their campuses, build links with the business community, and determine that the institution plays the role of solid local and global citizen. They should prod the campus community to test the bold and experimental steps that profit-making enterprises might place low on their agendas. But they also must preserve their institution's political and policy neutrality.

I am confident that this issue of *Priorities* will help you and your board become articulate about campus sustainability issues and determine how to proceed.

—Daniel J. Levin is AGB vice president for publications.

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